

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (previously presented) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

transmitting a first plurality of communication request messages to a first portion of nodes, wherein the first plurality of communication request messages do not include filter parameters for restricting responses to the first plurality of communication request messages; and

transmitting a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second plurality of communication request messages;

wherein the filter parameters include an address comparison value parameter which specifies a particular value to be used by each of the first portion of nodes for performing address comparison.

3. (previously presented) The method of claim 2, wherein at least a portion of the filter parameters are dynamically generated, the method further comprising:

determining a time to transmit a next communication request message to the first portion of nodes; and

determining whether the next communication request message is to include filter parameters for restricting responses to the next communication request message.

4. (currently amended) The method of claim 2, wherein at least a portion of the filter parameters are dynamically generated, the method further comprising determining whether the a next communication request message is to include filter parameters based upon a number of collisions detected on the communication channel during a predetermined time interval.

5. (currently amended) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

transmitting a first plurality of communication request messages to a first portion of nodes, wherein the first portion plurality of communication request messages do not include filter parameters for restricting responses to the first portion plurality of communication request messages;

transmitting a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second portion plurality of communication request messages; and

determining whether the a next communication request message is to include filter parameters based upon whether a selected number of previously transmitted communication request messages included filter parameters.

6. (currently amended) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

transmitting a first plurality of communication request messages to a first portion of nodes, wherein the first portion plurality of communication request messages do not include filter parameters for restricting responses to the first portion plurality of communication request messages;

transmitting a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second portion plurality of communication request messages;

increasing a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the communication channel during a predetermined time interval is greater than a first predetermined threshold value; and

decreasing a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the communication channel during the predetermined time interval is less than a second predetermined threshold value.

7. (previously presented) The method of claim 2 further comprising transmitting communication request messages to the first portion of nodes, wherein every other communication request message includes the filter parameters.

8. (cancelled)

9. (previously presented) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

using filter parameters in selected communication request messages transmitted to a first portion of nodes to thereby limit a number of responses to the communication request messages; and

dynamically changing the filter parameters each time a new communication request message which includes filter parameters is transmitted to the first portion of nodes.

10. (currently amended) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

transmitting a first plurality of communication request messages to the first portion of nodes, wherein the first portion plurality of communication request messages do not include filter parameters for restricting responses to the first portion plurality of communication request messages;

transmitting a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second portion plurality of communication request messages; and

maintaining state information relating to previously transmitted communication request messages which have been transmitted;

said state information including information relating to whether selected previous communication request messages included filter parameters.

11. (currently amended) A method for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the method comprising:

using filter parameters in selected communication request messages transmitted to a first portion of nodes to thereby limit a number of responses to the communication request messages; and

wherein the access network corresponds to a Digital Video Broadcasting (DVB) network, the communication request message corresponds to a Sign-on Request message transmitted from an interactive network adaptor (INA) to at least one network interface unit (NIU), and wherein the filter parameters correspond to address filter parameters.

12. (previously presented) The method of claim 11 further comprising using address filter parameters in Sign-On request messages to reduce numbers of NIUs contending for access to the Head End via the communication channel.

13. (previously presented) The method of claim 11 further comprising using address filter parameters in Sign-On Request messages to prevent selected groups of NIUs from being able to respond to the Sign-On Request messages in order to reduce chances of at least one Sign-On Response message collision on the communication channel.

14. (previously presented) The method of claim 2 wherein the communication channel is contention-based.

15. (previously presented) The method of claim 2 wherein the communication channel is configured to utilize a Time Division Multiple Access communication protocol, and wherein at least a portion of timeslots of the communication channel are contention-based.

16. - 46. (cancelled)

47. (currently amended) A system for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the system comprising:

at least one processor;

memory; and

at least one interface configured to provide at least one communication channel between the Head End and the plurality of network nodes;

the system being configured or designed to transmit a first plurality of communication request messages to a first portion of nodes, wherein a the first plurality of communication request messages do not include filter parameters for restricting responses to the first plurality of communication request messages; and

the system being further configured or designed to transmit a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second plurality of communication request messages.

48. (currently amended) The system of claim 47 wherein:

wherein at least a portion of the filter parameters are dynamically generated;

wherein the system is further configured or designed to determine a time to transmit a next communication request message to the first portion of nodes; and

wherein the system is further configured or designed to determine whether the next communication request message is to include filter parameters for restricting responses to the next communication request message.

49. (previously presented) The system of claim 47;

wherein at least a portion of the filter parameters are dynamically generated; and

wherein the system is further configured or designed to determine whether the next communication request message is to include filter parameters based upon a number of collisions detected on the communication channel during a predetermined time interval.

50. (previously presented) The system of claim 47;

wherein at least a portion of the filter parameters are dynamically generated; and

wherein the system is further configured or designed to determine whether the next communication request message is to include filter parameters based upon whether a selected number of previously transmitted communication request messages included filter parameters.

51. (currently amended) The system of claim 47 wherein:

wherein the system is further configured or designed to increase a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the communication channel during a predetermined time interval is greater than a first predetermined threshold value; and

wherein the system is further configured or designed to decrease a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the communication channel during the predetermined time interval is less than a second predetermined threshold value.

52. (previously presented) The system of claim 47 wherein the system is further configured or designed to transmit communication request messages to the first portion of nodes; and

wherein every other communication request message includes the filter parameters.

53. (previously presented) The system of claim 47 wherein the filter parameters include an address comparison value parameter which specifies a particular value to be used by each of the first portion of nodes for performing address comparison.

54. (currently amended) A system for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the system comprising:

at least one processor;

memory; and

at least one interface configured to provide at least one communication channel between the Head End and the plurality of network nodes;

the system being configured or designed to use filter parameters in selected communication request messages transmitted to a first portion of nodes to thereby limit a number of responses to the selected communication request messages;

wherein the system is being further configured or designed to dynamically change the filter parameters each time a new communication request message which includes filter parameters is transmitted to the first portion of nodes.

55. (currently amended) The system of claim 47 wherein:
wherein the processor is configured to store into the memory state information relating to previously transmitted communication request messages which have been transmitted; and
wherein said state information including includes information relating to whether selected previous communication request messages included filter parameters.

56. (currently amended) A system for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the system comprising:

at least one processor;
memory; and
at least one interface configured to provide at least one communication channel between the Head End and the plurality of network nodes;
the system being configured or designed to use filter parameters in selected communication request messages transmitted to a first portion of nodes to thereby limit a number of responses to the selected communication request messages;
wherein the access network corresponds to a Digital Video Broadcasting (DVB) network;
the system includes an interactive network adaptor (INA);
wherein a first request message of the selected communication request messages the communication request message corresponds to a Sign-on Request message transmitted from an interactive network adaptor (INA) to at least one network interface unit (NIU);
and wherein the filter parameters correspond to address filter parameters.

57. (previously presented) The system of claim 56 wherein the system is further configured or designed to use address filter parameters in Sign-On request messages to reduce numbers of NIUs contending for access to the Head End via the communication channel.

58. (previously presented) The system of claim 56 wherein the system is further configured or designed to use address filter parameters in Sign-On Request messages to prevent selected groups of NIUs from being able to respond to the Sign-On Request messages in order to reduce chances of at least one Sign-On Response message collision on the communication channel.

59. (previously presented) The system of claim 47 wherein the communication channel is contention-based.

60. (previously presented) The system of claim 47 wherein the communication channel is configured to utilize a Time Division Multiple Access communication protocol, and wherein at least a portion of timeslots of the communication channel are contention-based.

61. (currently amended) The system of claim 47,

wherein the system is further configured or designed to transmit a first communication request message from the Head End to a first portion of the plurality of nodes, the first communication request message including filter parameters for restricting responses to the first communication request to a first group of the first portion of nodes;

the system being further configured or designed to dynamically modify values associated with the filter parameters values; and

wherein the system is being further configured or designed to transmit a second communication request message from the Head End to the first portion of nodes, the second communication request message including the modified filter parameters for restricting responses to the second communication request to a second group of the first portion of nodes.

62. (cancelled.)

63. (previously presented) A system for reducing collisions of signals occurring on at least one communication channel in an access network, the access network including at least one Head End and a plurality of network nodes, the signals being transmitted by different nodes over the communication channel, the system comprising:

means for transmitting a first plurality of communication request messages to a first portion of nodes, wherein the first plurality of communication request messages do not include

filter parameters for restricting responses to the first plurality of communication request messages; and

means for transmitting a second plurality of communication request messages to the first portion of nodes, wherein the second plurality of communication request messages each include filter parameters for restricting a number of responses to the second plurality of communication request messages;

64. (currently amended) The system of claim 63 wherein at least a portion of the filter parameters are dynamically generated, the system further comprising:

means for determining a time to transmit a next communication request message to the first portion of nodes; and

means for determining whether the next communication request message is to include filter parameters for restricting responses to the next communication request message ~~first communication request~~.

65. (previously presented) The system of claim 63 further comprising means for determining whether the next communication request message is to include filter parameters based upon a number of collisions detected on the communication channel during a predetermined time interval.

66. (previously presented) The system of claim 63 further comprising means for determining whether the next communication request message is to include filter parameters based upon whether a selected number of previously transmitted communication request messages included filter parameters.

67. (previously presented) The system of claim 63 further comprising:

means for increasing a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the communication channel during a predetermined time interval is greater than a first predetermined threshold value; and

means for decreasing a transmission ratio of (a) communication request messages which include filter parameters to (b) communication request messages which do not include filter parameters based upon a determination that a number of collisions detected on the

communication channel during the predetermined time interval is less than a second predetermined threshold value.

68. (previously presented) The system of claim 63 further comprising means for transmitting communication request messages to the first portion of nodes, wherein every other communication request message includes the filter parameters.

69. (previously presented) The system of claim 63 wherein the filter parameters include an address comparison value parameter which specifies a particular value to be used by each of the first portion of nodes for performing address comparison.

70. (previously presented) The system of claim 63 further comprising means for dynamically changing the filter parameters each time a new communication request message which includes filter parameters is transmitted to the first portion of nodes.

71. (previously presented) The system of claim 63 further comprising:
means for maintaining state information relating to previously transmitted communication request messages which have been transmitted;
said state information including information relating to whether selected previous communication request messages included filter parameters.

72. (previously presented) The system of claim 63 wherein the access network corresponds to a Digital Video Broadcasting (DVB) network, the communication request message corresponds to a Sign-on Request message transmitted from an interactive network adaptor (INA) to at least one network interface unit (NIU), and wherein the filter parameters correspond to address filter parameters.

73. (previously presented) The system of claim 72 further comprising means for using address filter parameters in Sign-On request messages to reduce numbers of NIUs contending for access to the Head End via the communication channel.

74. (previously presented) The system of claim 72 further comprising means for using address filter parameters in Sign-On Request messages to prevent selected groups of NIUs from

being able to respond to the Sign-On Request messages in order to reduce chances of at least one Sign-On Response message collision on the communication channel.

75. (previously presented) The system of claim 63 wherein the communication channel is contention-based.

76. (previously presented) The system of claim 63 wherein the communication channel is configured to utilize a Time Division Multiple Access communication protocol, and wherein at least a portion of timeslots of the communication channel are contention-based.